

ABSTRACT OF THE DISCLOSURE

A Raman amplifier having at least a first and a second optical Raman-active fiber disposed in series with each other is disclosed. A first pump source is connected to the first Raman-active fiber, and is adapted for emitting and coupling into the first Raman-active fiber a first pump radiation including a first group of frequencies. A second pump source is connected to the second Raman-active fiber, and is adapted for emitting and coupling into the second Raman-active fiber a second pump radiation including a second group of frequencies. The whole of the first and second group of frequencies extends over a pump frequency range having a width of at least 40% of the Raman shift. The minimum and the maximum frequency in each of the first and second group of frequencies differ from each other by at most 70% of the Raman shift.